PATENT SPECIFICATION (11) 1 554 331

1 554 331

(21) Application No. 23191/77 (22) Filed 1 Jun. 1977
(31) Convention Application No. 2624690 (32) Filed 2 Jun. 1976 in
(33) Fed. Rep. of Germany (DE)
(44) Complete Specification Published 17 Oct. 1979
(51) INT. CL.² A61K 7/13
(52) Index at Acceptance
D1B 2D

(19)

(54) ALKALINE BLONDING MIXTURES

(71) We, HENKEL KOMMANDITGESELLSCHAFT AUF AKTIEN, a German Company, of 67 Henkelstrasse, 4000 Dusseldorf-Holthausen, Federal Republic of Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to improved alkaline blonding mixtures containing peroxide and persulphate.

The use of preparations containing hydrogen peroxide for the blonding of hair is generally known. The brightening action of the preparations containing hydrogen peroxide can be intensified to a considerable extent by the addition of persulphates.

Since, during the blonding operation, the natural pigments of the hair which produce the red or yellow tints of the hair are less readily destroyed than the pigments contributing to the brown or black tints, an undesirable red or yellow stain might remain particularly after the blonding of darker hair. This disadvantage can be countered by using blue dyestuffs which, together with the yellow or red tint of the hair produce a brownish or platinum blond colour desired by many people. The tinting of the hair with the blue dyestuff can be readily effected in a separate dyeing process.

However, since treatment in a separate dyeing process involves additional work, time and cost, early endeavours were made to eliminate the separate dyeing operation and to effect blonding and tinting in one working operation.

If only an average degree of brightness is desired when blonding, a blonding mixture can be used which includes only alkaline hydrogen peroxide without the addition of persulphate. In this case, a large number of direct blue dyestuffs can be incorporated in the blonding compound without difficulty. The stability of most of the blue dyestuffs conventionally used for the dyeing of hair is sufficiently high to avoid destruction by this blonding mixture during the blonding operation.

It will be appreciated that the same possibility of blonding and tinting in one working operation is desirable even when using a mixture of hydrogen peroxide and persulphate which has an intensive blonding action. However, all the endeavours in this respect have failed as a result of the instability of the blue dyestuffs, hitherto used for the dyeing of hair, compared with the extremely highly oxidizing mixture of hydrogen peroxide and persulphate in an alkaline environment.

Unexpectedly, it was found that the requirements can be met in an excellent manner by alkaline blonding mixtures based on mixtures of hydrogen peroxide and persulphates having a content of (2'-methyl-4'-(N-ethyl-N-m-sulphobenzyl)-amino-4''-(N-diethyl)-amino-2-methyl-N-ethyl-N-m-sulphobenzyl-fuchsonimonium (brilliant blue R 28032 ex. conc., Colour Index No. 42 735) and (1,5-di-(4'-methyl-2'-sulphophenylamino)-anthraquinone (lilac colour R 5283, Colour Index No. 61 710).

A dyestuff combination of this type remains stable for a long period of time in the extremely strongly oxidizing alkaline mixture of hydrogen peroxide and persulphate, attaches itself satisfactorily to the hair, and thus proves to be eminently suitable for brightening the hair in one working operation during bleaching with a hydrogen peroxide persulphate mixture.

The proportion of the two dyestuffs, brilliant blue R 28032 ex.conc. and lilac colour R 5283 in the dyestuff mixture can fluctuate within wide limits in the weight ratios of 1:9 to 9:1 according to the desired tinting effect. A ratio of brilliant blue R 28032 ex.conc. to lilac colour R 5283 of 2:1 has proved to be an advantageous mixture for obtaining the most attractive

effect.

According to the desired tinting effect, the quantity of the dyestuff combination to be used is generally between 0.015 to 0.3 percent by weight relative to the blonding mixture. Preferred quantity ratios, particularly when using the components brilliant blue R 28032 ex.conc. and lilac colour R 5283, in the ratio 2:1, are 0.02: 0.01 to 0.08:0.04 percent by weight relative to the blonding mixture.

The blonding mixtures in accordance with the invention preferably contain hydrogen peroxide as a bleaching component in a quantity of 1 to 10 percent by weight, preferably 2 to 6 percent by weight, relative to the total blonding mixture. Alternatively, the hydrogen peroxide can be replaced by a corresponding quantity of a percompound which releases hydrogen peroxide when dissolved in water, such as the water-soluble alkaline metal peroxides, alkaline earth metal peroxides, urea peroxides and melamine perhydrate.

The persulphates, such as ammonium peroxide disulphate, potassium peroxide disulphate or sodium peroxide disulphate, also contained in the blonding mixtures and acting as bleaching intensifiers, are generally present in quantities of from 2 to 45 percent by weight, preferably 5 to 40 percent by weight, relative to the total blonding mixture.

In order to ensure convenient handling, it is advantageous to add thickeners to these blonding mixtures in order to impart a cream-like consistency to the products. Products conventionally used for this purpose, such as calcium carbonate, magnesium carbonate, talc, kaolin, bentonite, sodium metasilicate, carboxymethylcellulose, higher fatty alcohols, can be incorporated in quantities of from 1 to 8 percent by weight relative to the total blonding mixture. In addition to the thickeners, wetting agents, solvents, carbonate- or phosphate buffers for stabilizing the pH value, and perfumes can be added to the products in the conventional quantities.

The alkaline adjustment of the blonding mixtures is effected preferably by ammonia, although, alternatively, it can be effected by other basically reacting compounds. The pH value of the mixtures is adjusted to values of approximately 8 to 11 and should not exceed the value 12. The mixtures are used in a conventional manner at temperatures between 10 and 40°.

The following Examples are intended to further explain the subject of the invention, but without limiting the invention to these Examples.

Examples

1) Blonding mixture based on a cream.

A cream is manufactured in the first instance from the following constituents:

Cetyl-stearylalcohol	11.0 parts by weight
Lauryl sulphate	12.0 parts by weight
Ammoniumsulphate	1.0 parts by weight
Brilliant blue R 28032 ex.conc.	0.06 parts by weight
Lilac colour R 5283	0.03 parts by weight
Ammonia conc.	14.0 parts by weight
Perfume oil	1.0 parts by weight
Water	60.7 parts by weight

In order to manufacture the blonding mixture, 50 g of the afordsaid cream are mixed with 50 g of a 6% hydrogen peroxide solution and 14 g of ammonium peroxide disulphate.

For the purpose of blonding, this blonding mixture is applied to dark-blonde to black hair and is left for 30 minutes at room temperature. The hair is subsequently washed and dried. It will be appreciated that the hair may be subjected to further treatment following the blonding operation. The hair bleached in accordance with the invention does not show any red or yellow stain, and has a very attractive platinum blonde tint.

2) Blonding mixture based on a blonding powder.

The constituents given hereinafter are intimately mixed to form a bleaching powder containing persulphate:

Magnesium oxide	40.0 parts by weight
Magnesium carbonate	19.55 parts by weight
Potassium peroxide disulphate	20.0 parts by weight
Ammonium peroxide disulphate	20.0 parts by weight
Brilliant blue R 28032 ex.conc.	0.3 parts by weight
Lilac colour R 5283	0.15 parts by weight

In order to manufacture the blonding mixture, 1 part by weight of the powder is mixed with 3 parts by weight of a 6% hydrogen peroxide solution.

The mixture is used in accordance with the data given in Example 1 and also produces silver-blonde dyed hair.

WHAT WE CLAIM IS:—

1. An alkaline blonding composition comprising a peroxide, a persulphate; (2'-methyl-4'-(N-ethyl-N-m-sulphobenzyl)-amino-4''-(N-diethyl)-amino-2-methyl-N-ethyl-N-m-

sulphobenzyl-fuchsonimonium (Brilliant blue R28032 ex.conc., Colour Index No. 42 735) and (1,5-di-(4'-methyl-2'-sulpho-phenylamino)-anthraquinone (Lilac colour R 5283, Colour Index No. 61 710).

2. A composition as claimed in claim 1 in which the weight ratio of the dyestuff brilliant blue R 28032 ex. conc., to the dyestuff lilac colour R 5283 is from 1:9 to 9:1.

3. A composition as claimed in claim 2 in which the weight ratio of the dyestuff brilliant blue R 28032 ex.conc. to the dyestuff lilac colour R 5283 is 2:1.

4. A composition as claimed in claim 1,2 or 3 which contains a total of 0.015 to 0.3 percent by weight relative to the total composition of the dyestuffs brilliant blue R 28032 ex.conc. and lilac colour R 5283.

5. A composition as claimed in claim 4 in which the total weight of the dyestuffs is 0.03 to 0.12 percent relative to the total composition.

6. A composition as claimed in claim 1 and substantially as hereinbefore described with reference to either of the Examples.

7. A method of blonding hair comprising the steps of applying a composition as claimed in any one of claims 1 to 5 to the hair and subsequently washing and drying the hair.

8. A method as claimed in claim 7 and substantially as hereinbefore described with reference to either of the Examples.

W.P. THOMPSON & CO.,
Chartered Patent Agents,
Coopers Building,
Church Street,
Liverpool L1 3AB.

Printed for Her Majesty's Stationery Office, by Croydon Printing Company Limited, Croydon, Surrey, 1979.
Published the The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.